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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,081	11/26/2003	William P. Collins	C-2438	7877

7590 05/17/2005

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EXAMINER	
HODGE, ROBERT W	

ART UNIT	PAPER NUMBER
1746	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/723,081	COLLINS, WILLIAM P.	
	Examiner	Art Unit	
	Robert Hodge	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) *12 and 13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/26/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-11, drawn to a fuel cell power plant, classified in class 429, subclass 26.

   II. Claims 12-13, drawn to a method of increasing a temperature differential, classified in class 429, subclass 12.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the method of increasing a temperature differential can be used for more than just the fuel cell power plant of the present invention and can also be used in electrolyzer systems that would require and increased temperature differential.

3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Stephen Schneeberger on 5/2/05 a provisional election was made with traverse to prosecute the invention of group I, claims 1-11. Affirmation of this election must be made by applicant in replying to this Office

action. Claims 12-13 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Language

5. Applicants are put on notice that claim language for claiming an apparatus must provide structure for the apparatus that the applicants deem to be their invention. In the instant application the claim language of claims 1, 4-7 and 9-11 does provide structure but also provides process steps as well as intended use statements. The examiner notes that little to no patentable weight has been given to the claim language, which provides a process step or is a statement of intended use. In light of the above statements the examiner has examined claims 1, 4-7 and 9-11 in as much as the structure of the apparatus has been claimed and as long as the structure of the prior art can perform the same function it will read on the claims as so recited.

Claim Objections

6. Claims 2-4 and 8-11 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

7. It is unclear in claim 2 and 8 how the function of a humidifier or heat removal means further limits the structure set forth in claim 1 since all of the structural features

are the same. Therefore because of the dependency of claims 3-4 and 9-11 on claims 2 and 8 respectively, the same deficiency exists.

8. Claims 4 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. It is unclear in claim 1 what the applicant is specifically trying to claim by the use of such terms as "a heat removal means" and "a sink medium". When the specification defines both terms as a radiator for the system. If there are supposed to be two radiators in the system then the drawings and specification do not support that structure. Nor do they support any contact means which would enable them to transfer heat from one to the other, and it is very unclear why one of ordinary skill in the art would want to transfer heat from one radiator to another, when the point of a radiator is to dissipate heat away in order to cool the cooling fluid for the system. It appears to the examiner that the applicant is using the above terms to define the same thing as so

recited. Therefore any prior art that discloses a radiator used in the coolant loop will read on the claim as so recited. And because of the dependency of claims 2-11 on claim 1, the same deficiency exists.

12. The term "relative reduction" in claim 3 is a relative term, which renders the claim indefinite. The term "relative reduction" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how the size of the heat removal means is reduced in size since now reference is given as to the original size or how much smaller it would be made.

13. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "enthalpy" in claim 6 is used by the claim to mean "a heat exchange barrier", while the accepted meaning is "heat of reaction of a chemical reaction." The term is indefinite because the specification does not clearly redefine the term.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Breault U.S. Patent No 6,416,892 hereinafter Breault.

16. Breault teaches a fuel cell power plant comprising a fuel cell stack with an anode having an inlet and outlet, a cathode having an inlet and outlet, an electrolyte there between, a coolant region with coolant loop, wherein the coolant loop has an air cooled radiator with fan, and also feeds a humidifier or saturator, which is operatively connected to the coolant loop and the inlet stream for the oxidant, wherein the humidifier further comprises an energy recovery device or enthalpy exchange device (abstract, figure 1, column 6, line 60 – column 9, line 43).

Double Patenting

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 1, 5-7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 13 of copending Application No. 10/723,200. Although the conflicting claims are not identical, they are not patentably distinct from each other because the scope of the claims in the present application fully encompasses the scope of the claims in copending Application No. 10/723,200.

19. Both sets of claims, claim "A fuel cell power plant (110) comprising: a fuel cell stack assembly (CSA) (12) having an anode region (16) having an inlet (26) and an outlet (42), a cathode region (18) having an inlet (36) and an outlet (46), an electrolyte region (20) intermediate the anode and cathode regions, and a coolant region (22) having an inlet (48) and an outlet (50): an inlet fuel stream (24) operatively connected to the anode region inlet (26) 7 an inlet oxidant stream (134') operatively connected to the cathode region inlet (36); a coolant loop (114) operatively connected to the coolant region inlet (48) and outlet (50), the coolant loop (114) including a heat removal means (152, 156) for transferring heat from the CSA coolant at a source temperature to a sink medium at a sink temperature lower than the source temperature, the difference between said source temperature and said sink temperature being a temperature differential; and a humidifier (70) operatively connected in the coolant loop (114) and in the inlet oxidant stream (134') for both cooling the coolant prior to return introduction of the coolant to the CSA (12) and for relatively increasing the temperature and humidity of the inlet oxidant stream (134') prior to introduction of the inlet oxidant stream to the CSA oxidant region inlet (36), thereby to distribute the heat of at least the CSA (12) and the

heat removal means (152, 156) so as to increase the coolant exit temperature from the CSA (12) and to the heat removal means (152, 156) so as to relatively increase the temperature differential between the source temperature and the sink temperature. Wherein the humidifier comprises an energy recovery device for heat and mass transfer between the inlet oxidant stream (134) and the coolant (114':') being returned from the heat removal means (152, 156) to the CSA (12). Wherein the energy recovery device (70) comprises a gas flow chamber (72) and a liquid coolant flow chamber (74) separated by a fine pore enthalpy exchange barrier (76). And wherein the energy recovery device (70) comprises a saturator having the inlet oxidant stream (134) in direct contact with the coolant (114'") being returned from the heat removal means (152, 156) to the CSA." The only difference is the claims of copending Application No. 10/723,200 further limit the scope by adding a reformer to the system.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Hodge whose telephone number is (571) 272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RWH 5-10-05

MICHAEL BARR
SUPERVISORY PATENT EXAMINER